

**QUANTITY WORKSHEET - Modal Alternative  
CAPITAL COST ESTIMATES  
CA HSRA PROGRAM EIR/EIS  
Bay Area to Merced**

COST ELEMENTS			UNIT	UNIT PRICE	Highway Segments			
					U.S. 101 San Francisco to San Francisco Airport		US-101 San Francisco Airport to Redwood City	
<b>Highway Cost</b>								
<b>Main Line</b>					<b>Unit</b>	<b>Unit Cost</b>	<b>Unit</b>	<b>Unit Cost</b>
1	No. of additional lanes in both directions	ea	N/A		2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A		18.1	See Items 3-6	22.2	See Items 3-6
3	Pavement-AC	m2	\$48		43486.9	\$2,106,403	53234.5	\$2,578,551
4	Pavement-PCC	m2	\$65		86973.9	\$5,653,302	106469.0	\$6,920,484
5	Separate Aerial Structure	m2	\$1,346		0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7		130460.8	\$853,181	159703.5	\$1,044,421
<b>Other</b>								
1	Overhead Signs	ea	\$20,000		34	\$680,000	20	\$400,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605		18.1	\$21,392,044	22.2	\$26,187,053
3	Traffic Handling	km	\$347,968		18.1	\$6,305,024	22.2	\$7,718,289
4	Miscellaneous Costs	km	\$559,234		18.1	\$10,133,074	22.2	\$12,404,393
5	City Street Relocation/Reconstruction	km	\$329,327		18.1	\$5,967,254	22.2	\$7,304,809
6	Removals	km	\$323,113		18.1	\$5,854,665	22.2	\$7,166,983
7	Surveillance, Control, & Communications	km	\$124,274		18.1	\$2,251,794	22.2	\$2,756,532
<b>Interchange (includes structure, right-of-way, and mobilization)</b>								
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000		3	\$532,575,000	2	\$355,050,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000		1	\$23,610,000	3	\$70,830,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000		1	\$13,040,000	3	\$39,120,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000		0	\$0	1	\$9,610,000
5	Urb Overcrossing Bridge Modification	ea	\$200,000		0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000		2	\$36,400,000	1	\$18,200,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000		1	\$10,340,000	1	\$10,340,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000		1	\$9,610,000	0	\$0
9	Sub Overcrossing Bridge Modification	ea	\$200,000		0	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000		0	\$0	0	\$0
11	Und Overcrossing Ramp Modification	ea	\$9,350,000		0	\$0	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000		0	\$0	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000		0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000		0	\$0	0	\$0
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000		2	\$1,800,000	1	\$900,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000		6	\$88,950,000	0	\$0
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000		14	\$12,600,000	1	\$900,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000		0	\$0	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000		1	\$900,000	0	\$0
20	Urb At-Grade Interchange Modification	ea	\$3,100,000		0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000		5	\$15,500,000	2	\$6,200,000
22	Und At-Grade Interchange Modification	ea	\$3,100,000		1	\$3,100,000	0	\$0
<b>Utility Relocation</b>								
1	Major Utility relocations - Urban	km	\$758,511		2.9	\$2,170,088	13.3	\$10,094,744
2	Major Utility relocations - Suburban	km	\$406,345		14.3	\$5,812,736	8.9	\$3,605,266
3	Major Utility relocations - Undeveloped	km	\$11,919		1.0	\$11,367	0.0	\$0
<b>Right-of-Way Items (Interchange Right-of-Way cost not included)</b>								
1	Right-of-way - Urban	Hectares	\$3,499,093		2.1	\$7,207,808	9.6	\$33,529,043
2	Right-of-way - Suburban	Hectares	\$1,166,364		10.3	\$12,013,014	6.4	\$7,450,898
3	Right-of-way - Undeveloped	Hectares	\$291,591		0.7	\$200,217	0.0	\$0
<b>Environmental Mitigation</b>								
	Environmental Mitigation (3% of Construction Costs)					\$24,528,478		\$17,979,946
<b>Program Implementation Costs</b>								
	Program Implementation Costs (25.5% of Total Cost and Procurement)					\$219,699,190		\$167,864,310
<b>Contingencies</b>								
	Contingencies (25% of Total Construction Cost)					\$215,391,362		\$164,572,853
<b>Total Construction</b>						\$817,615,933		\$599,331,526
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>						\$861,565,450		\$658,291,413
<b>Grand Total</b>						\$1,296,656,002		\$990,728,576

**QUANTITY WORKSHEET - Modal Alternative  
CAPITAL COST ESTIMATES  
CA HSRA PROGRAM EIR/EIS  
Bay Area to Merced**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
				US-101 Redwood City to I-880		I-880 US-101 to San Jose	
Highway Cost							
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	31.6	See Items 3-6	1.4	See Items 3-6
3	Pavement-AC	m2	\$48	75903.4	\$3,676,580	3397.3	\$164,557
4	Pavement-PCC	m2	\$65	151806.9	\$9,867,447	6794.6	\$441,649
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	227710.3	\$1,489,169	10191.9	\$66,653
Other							
1	Overhead Signs	ea	\$20,000	44	\$880,000	6	\$120,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	31.6	\$37,338,334	1.4	\$1,671,196
3	Traffic Handling	km	\$347,968	31.6	\$11,004,983	1.4	\$492,563
4	Miscellaneous Costs	km	\$559,234	31.6	\$17,686,579	1.4	\$791,619
5	City Street Relocation/Reconstruction	km	\$329,327	31.6	\$10,415,430	1.4	\$466,176
6	Removals	km	\$323,113	31.6	\$10,218,913	1.4	\$457,380
7	Surveillance, Control, & Communications	km	\$124,274	31.6	\$3,930,351	1.4	\$175,915
Interchange (includes structure, right-of-way, and mobilization)							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	2	\$355,050,000	0	\$0
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	4	\$94,440,000	0	\$0
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	3	\$39,120,000	0	\$0
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	6	\$109,200,000	1	\$18,200,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	5	\$51,700,000	1	\$10,340,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	0	\$0	0	\$0
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	2	\$40,100,000	1	\$20,050,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	1	\$900,000	1	\$900,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	0	\$0	0	\$0
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	3	\$2,700,000	2	\$1,800,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	2	\$6,200,000	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
Utility Relocation							
1	Major Utility relocations - Urban	km	\$758,511	15.8	\$11,994,507	0.5	\$357,902
2	Major Utility relocations - Suburban	km	\$406,345	15.8	\$6,425,629	0.9	\$383,466
3	Major Utility relocations - Undeveloped	km	\$11,919	0.0	\$0	0.0	\$0
Right-of-Way Items (Interchange Right-of-Way cost not included)							
1	Right-of-way - Urban	Hectares	\$3,499,093	11.4	\$39,838,982	0.3	\$1,188,747
2	Right-of-way - Suburban	Hectares	\$1,166,364	11.4	\$13,279,661	0.7	\$792,498
3	Right-of-way - Undeveloped	Hectares	\$291,591	0.0	\$0	0.0	\$0
Environmental Mitigation							
Environmental Mitigation (3% of Construction Costs)					\$25,306,738		\$1,706,372
Program Implementation Costs							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$235,105,742		\$15,444,507
Contingencies							
Contingencies (25% of Total Construction Cost)					\$230,495,826		\$15,141,674
Total Construction					\$843,557,923		\$56,879,076
Total Construction and Right of Way (Includes Environmental Mitigation)					\$921,983,303		\$60,566,694
Grand Total					\$1,387,584,871		\$91,152,875

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Bay Area to Merced**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
Highway Cost				US-101 San Jose to Gilroy		US-101 Gilroy to SR-152	
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	50.2	See Items 3-6	2.3	See Items 3-6
3	Pavement-AC	m2	\$48	120465.1	\$5,835,041	5594.7	\$270,995
4	Pavement-PCC	m2	\$65	240930.2	\$15,660,466	11189.4	\$727,314
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	361395.4	\$2,363,437	16784.2	\$109,764
<b>Other</b>							
1	Overhead Signs	ea	\$20,000	34	\$680,000	2	\$40,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	50.2	\$59,259,067	2.3	\$2,752,149
3	Traffic Handling	km	\$347,968	50.2	\$17,465,830	2.3	\$811,160
4	Miscellaneous Costs	km	\$559,234	50.2	\$28,070,084	2.3	\$1,303,650
5	City Street Relocation/Reconstruction	km	\$329,327	50.2	\$16,530,161	2.3	\$767,705
6	Removals	km	\$323,113	50.2	\$16,218,271	2.3	\$753,220
7	Surveillance, Control, & Communications	km	\$124,274	50.2	\$6,237,797	2.3	\$289,700
<b>Interchange (includes structure, right-of-way, and mobilization)</b>							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	2	\$355,050,000	0	\$0
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	2	\$47,220,000	0	\$0
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	1	\$13,040,000	0	\$0
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	3	\$28,830,000	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	2	\$400,000	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	4	\$72,800,000	1	\$18,200,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	4	\$41,360,000	0	\$0
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	3	\$28,830,000	1	\$9,610,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000	2	\$400,000	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	1	\$16,170,000	0	\$0
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	1	\$9,350,000	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	0	\$0	0	\$0
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	2	\$1,800,000	0	\$0
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	2	\$29,650,000	0	\$0
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	2	\$1,800,000	0	\$0
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	2	\$25,700,000	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	2	\$1,800,000	0	\$0
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
<b>Utility Relocation</b>							
1	Major Utility relocations - Urban	km	\$758,511	13.9	\$10,575,715	0.0	\$0
2	Major Utility relocations - Suburban	km	\$406,345	26.5	\$10,764,568	2.3	\$947,246
3	Major Utility relocations - Undeveloped	km	\$11,919	9.8	\$116,333	0.0	\$0
<b>Right-of-Way Items (Interchange Right-of-Way cost not included)</b>							
1	Right-of-way - Urban	Hectares	\$3,499,093	10.0	\$35,126,557	0.0	\$0
2	Right-of-way - Suburban	Hectares	\$1,166,364	19.1	\$22,246,820	1.7	\$1,957,645
3	Right-of-way - Undeveloped	Hectares	\$291,591	7.0	\$2,049,049	0.0	\$0
<b>Environmental Mitigation</b>							
Environmental Mitigation (3% of Construction Costs)					\$26,207,603		\$1,097,487
<b>Program Implementation Costs</b>							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$244,600,284		\$10,107,699
<b>Contingencies</b>							
Contingencies (25% of Total Construction Cost)					\$239,804,200		\$9,909,508
<b>Total Construction</b>					\$873,586,770		\$36,582,901
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>					\$959,216,799		\$39,638,034
<b>Grand Total</b>					\$1,443,621,282		\$59,655,241

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Bay Area to Merced**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
				SR-152 US-101 to I-5		SR-152 I-5 to SR-99	
<b>Highway Cost</b>							
<b>Main Line</b>				<b>Unit</b>	<b>Unit Cost</b>	<b>Unit</b>	<b>Unit Cost</b>
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	65.7	See Items 3-6	69.0	See Items 3-6
3	Pavement-AC	m2	\$48	157711.0	\$7,639,144	165484.9	\$8,015,691
4	Pavement-PCC	m2	\$65	315422.1	\$20,502,435	330969.8	\$21,513,037
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	473133.1	\$3,094,174	496454.7	\$3,246,691
<b>Other</b>							
1	Overhead Signs	ea	\$20,000	16	\$320,000	88	\$1,760,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	65.7	\$77,581,036	69.0	\$81,405,144
3	Traffic Handling	km	\$347,968	65.7	\$22,865,990	69.0	\$23,993,095
4	Miscellaneous Costs	km	\$559,234	65.7	\$36,748,912	69.0	\$38,560,331
5	City Street Relocation/Reconstruction	km	\$329,327	65.7	\$21,641,026	69.0	\$22,707,751
6	Removals	km	\$323,113	65.7	\$21,232,705	69.0	\$22,279,303
7	Surveillance, Control, & Communications	km	\$124,274	65.7	\$8,166,425	69.0	\$8,568,963
<b>Interchange (includes structure, right-of-way, and mobilization)</b>							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$177,525,000	1	\$177,525,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	0	\$0	0	\$0
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0	0	\$0
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	0	\$0	0	\$0
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	0	\$0	0	\$0
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	0	\$0	0	\$0
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	0	\$0	0	\$0
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	0	\$0	0	\$0
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	1	\$900,000	2	\$1,800,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	1	\$12,850,000	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	2	\$1,800,000	21	\$18,900,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	1	\$3,100,000	8	\$24,800,000
22	Und At-Grade Interchange Modification	ea	\$3,100,000	6	\$18,600,000	36	\$111,600,000
<b>Utility Relocation</b>							
1	Major Utility relocations - Urban	km	\$758,511	0.0	\$0	0.0	\$0
2	Major Utility relocations - Suburban	km	\$406,345	11.0	\$4,450,359	10.1	\$4,120,345
3	Major Utility relocations - Undeveloped	km	\$11,919	54.8	\$652,719	58.8	\$701,008
<b>Right-of-Way Items (Interchange Right-of-Way cost not included)</b>							
1	Right-of-way - Urban	Hectares	\$3,499,093	0.0	\$0	0.0	\$0
2	Right-of-way - Suburban	Hectares	\$1,166,364	7.9	\$9,197,427	7.3	\$8,515,398
3	Right-of-way - Undeveloped	Hectares	\$291,591	39.4	\$11,496,781	42.3	\$12,347,325
<b>Environmental Mitigation</b>							
	Environmental Mitigation (3% of Construction Costs)				\$13,190,098		\$17,144,891
<b>Program Implementation Costs</b>							
	Program Implementation Costs (25.5% of Total Cost and Procurement)				\$120,756,328		\$155,423,513
<b>Contingencies</b>							
	Contingencies (25% of Total Construction Cost)				\$118,388,557		\$152,375,993
<b>Total Construction</b>					\$439,669,923		\$571,496,358
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>					\$473,554,229		\$609,503,972
<b>Grand Total</b>					\$712,699,115		\$917,303,478

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**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Bay Area to Merced**

COST ELEMENTS			UNIT	UNIT PRICE	Highway Segments		
					I-80 San Francisco to I-880	I-80 I-880 to I-5 (Sacramento)	
Highway Cost							
Main Line					Unit	Unit Cost	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	14.7	See Items 3-6	139.5	See Items 3-6
3	Pavement-AC	m2	\$48	35378.4	\$1,713,646	334691.5	\$16,211,654
4	Pavement-PCC	m2	\$65	70756.8	\$4,599,194	669383.1	\$43,509,901
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	106135.3	\$694,098	1004074.6	\$6,566,400
Other							
1	Overhead Signs	ea	\$20,000	16	\$320,000	152	\$3,040,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	14.7	\$17,403,312	139.5	\$164,641,085
3	Traffic Handling	km	\$347,968	14.7	\$5,129,397	139.5	\$48,525,794
4	Miscellaneous Costs	km	\$559,234	14.7	\$8,243,674	139.5	\$77,987,883
5	City Street Relocation/Reconstruction	km	\$329,327	14.7	\$4,854,608	139.5	\$45,926,197
6	Removals	km	\$323,113	14.7	\$4,763,012	139.5	\$45,059,665
7	Surveillance, Control, & Communications	km	\$124,274	14.7	\$1,831,928	139.5	\$17,330,641
Interchange (includes structure, right-of-way, and mobilization)							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$177,525,000	10	\$1,775,250,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	1	\$23,610,000	5	\$118,050,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0	5	\$65,200,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	1	\$9,610,000
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	0	\$0	10	\$182,000,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	0	\$0	9	\$93,060,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	1	\$9,610,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	0	\$0	6	\$97,020,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0	6	\$56,100,000
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	2	\$400,000	1	\$200,000
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	0	\$0	8	\$160,400,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	2	\$1,800,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	5	\$74,125,000	17	\$252,025,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	14	\$12,600,000	6	\$5,400,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	1	\$12,850,000	5	\$64,250,000
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	5	\$4,500,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	1	\$3,100,000
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	1	\$3,100,000	2	\$6,200,000
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	2	\$6,200,000
Utility Relocation							
1	Major Utility relocations - Urban	km	\$758,511	1.2	\$894,498	38.3	\$29,037,119
2	Major Utility relocations - Suburban	km	\$406,345	11.8	\$4,791,953	64.3	\$26,111,185
3	Major Utility relocations - Undeveloped	km	\$11,919	1.8	\$21,085	36.9	\$440,001
Right-of-Way Items (Interchange Right-of-Way cost not included)							
1	Right-of-way - Urban	Hectares	\$3,499,093	0.8	\$2,971,017	27.6	\$96,444,921
2	Right-of-way - Suburban	Hectares	\$1,166,364	8.5	\$9,903,391	46.3	\$53,963,230
3	Right-of-way - Undeveloped	Hectares	\$291,591	1.3	\$371,377	26.6	\$7,750,037
Environmental Mitigation							
Environmental Mitigation (3% of Construction Costs)					\$10,784,112		\$103,030,876
Program Implementation Costs							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$97,792,577		\$942,365,655
Contingencies							
Contingencies (25% of Total Construction Cost)					\$95,875,075		\$923,887,897
Total Construction					\$359,470,404		\$3,434,362,527
Total Construction and Right of Way (Includes Environmental Mitigation)					\$383,500,301		\$3,695,551,589
Grand Total					\$577,167,953		\$5,561,805,142



**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Bay Area to Merced**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
				I-880 I-80 to I-238		I-580 I-880 to I-5 (via I-238)	
<b>Highway Cost</b>							
<b>Main Line</b>				<b>Unit</b>	<b>Unit Cost</b>	<b>Unit</b>	<b>Unit Cost</b>
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	22.3	See Items 3-6	84.8	See Items 3-6
3	Pavement-AC	m2	\$48	53431.1	\$2,588,076	203414.0	\$9,852,887
4	Pavement-PCC	m2	\$65	106862.3	\$6,946,047	406828.1	\$26,443,824
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	160293.4	\$1,048,279	610242.1	\$3,990,833
<b>Other</b>							
1	Overhead Signs	ea	\$20,000	44	\$880,000	54	\$1,080,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	22.3	\$26,283,781	84.8	\$100,063,197
3	Traffic Handling	km	\$347,968	22.3	\$7,746,799	84.8	\$29,492,311
4	Miscellaneous Costs	km	\$559,234	22.3	\$12,450,212	84.8	\$47,398,356
5	City Street Relocation/Reconstruction	km	\$329,327	22.3	\$7,331,791	84.8	\$27,912,365
6	Removals	km	\$323,113	22.3	\$7,193,456	84.8	\$27,385,717
7	Surveillance, Control, & Communications	km	\$124,274	22.3	\$2,766,714	84.8	\$10,532,968
<b>Interchange (includes structure, right-of-way, and mobilization)</b>							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$177,525,000	4	\$710,100,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	3	\$70,830,000	4	\$94,440,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	3	\$39,120,000	3	\$39,120,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	1	\$9,610,000
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	2	\$36,400,000	1	\$18,200,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	1	\$10,340,000	1	\$10,340,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
9	Sub Overcrossing Bridge Modification	ea	\$200,000	1	\$200,000	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	0	\$0	3	\$48,510,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0	3	\$28,050,000
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	1	\$9,610,000
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	1	\$200,000
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	6	\$120,300,000	2	\$40,100,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	8	\$7,200,000	1	\$900,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	5	\$74,125,000	3	\$44,475,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	7	\$6,300,000	4	\$3,600,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	7	\$89,950,000
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	12	\$10,800,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	2	\$6,200,000	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
<b>Utility Relocation</b>							
1	Major Utility relocations - Urban	km	\$758,511	12.5	\$9,473,038	19.9	\$15,126,655
2	Major Utility relocations - Suburban	km	\$406,345	9.8	\$3,971,615	16.6	\$6,752,971
3	Major Utility relocations - Undeveloped	km	\$11,919	0.0	\$0	48.2	\$574,453
<b>Right-of-Way Items (Interchange Right-of-Way cost not included)</b>							
1	Right-of-way - Urban	Hectares	\$3,499,093	9.0	\$31,464,084	14.4	\$50,242,209
2	Right-of-way - Suburban	Hectares	\$1,166,364	7.0	\$8,208,022	12.0	\$13,956,169
3	Right-of-way - Undeveloped	Hectares	\$291,591	0.0	\$0	34.7	\$10,118,221
<b>Environmental Mitigation</b>							
	Environmental Mitigation (3% of Construction Costs)				\$19,693,194		\$43,938,346
<b>Program Implementation Costs</b>							
	Program Implementation Costs (25.5% of Total Cost and Procurement)				\$182,530,302		\$403,630,952
<b>Contingencies</b>							
	Contingencies (25% of Total Construction Cost)				\$178,951,277		\$395,716,620
<b>Total Construction</b>					\$656,439,807		\$1,464,611,536
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>					\$715,805,107		\$1,582,866,480
<b>Grand Total</b>					\$1,077,286,687		\$2,382,214,053

**QUANTITY WORKSHEET - Modal Alternative  
CAPITAL COST ESTIMATES  
CA HSRA PROGRAM EIR/EIS  
Bay Area to Merced**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
				I-880 I-238 to Fremont/Newark		I-880 Fremont/Newark to US-101	
Highway Cost							
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	23.3	See Items 3-6	20.0	See Items 3-6
3	Pavement-AC	m2	\$48	55853.0	\$2,705,384	47965.2	\$2,323,319
4	Pavement-PCC	m2	\$65	111706.0	\$7,260,887	95930.4	\$6,235,477
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	167558.9	\$1,095,794	143895.6	\$941,042
Other							
1	Overhead Signs	ea	\$20,000	18	\$360,000	24	\$480,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	23.3	\$27,475,132	20.0	\$23,594,990
3	Traffic Handling	km	\$347,968	23.3	\$8,097,934	20.0	\$6,954,313
4	Miscellaneous Costs	km	\$559,234	23.3	\$13,014,536	20.0	\$11,176,574
5	City Street Relocation/Reconstruction	km	\$329,327	23.3	\$7,664,116	20.0	\$6,581,760
6	Removals	km	\$323,113	23.3	\$7,519,510	20.0	\$6,457,576
7	Surveillance, Control, & Communications	km	\$124,274	23.3	\$2,892,119	20.0	\$2,483,683
Interchange (includes structure, right-of-way, and mobilization)							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	2	\$355,050,000	1	\$177,525,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	1	\$23,610,000	3	\$70,830,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0	3	\$39,120,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	2	\$36,400,000	2	\$36,400,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	2	\$20,680,000	2	\$20,680,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	2	\$19,220,000	1	\$9,610,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000	1	\$200,000	1	\$200,000
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	0	\$0	0	\$0
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	1	\$20,050,000	2	\$40,100,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	1	\$900,000	0	\$0
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	3	\$44,475,000	0	\$0
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	1	\$900,000	0	\$0
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
Utility Relocation							
1	Major Utility relocations - Urban	km	\$758,511	4.4	\$3,309,775	10.7	\$8,084,925
2	Major Utility relocations - Suburban	km	\$406,345	18.9	\$7,683,407	9.3	\$3,789,808
3	Major Utility relocations - Undeveloped	km	\$11,919	0.0	\$0	0.0	\$0
Right-of-Way Items (Interchange Right-of-Way cost not included)							
1	Right-of-way - Urban	Hectares	\$3,499,093	3.1	\$10,993,205	7.7	\$26,853,556
2	Right-of-way - Suburban	Hectares	\$1,166,364	13.6	\$15,879,074	6.7	\$7,832,287
3	Right-of-way - Undeveloped	Hectares	\$291,591	0.0	\$0	0.0	\$0
Environmental Mitigation							
Environmental Mitigation (3% of Construction Costs)					\$18,316,908		\$14,207,054
Program Implementation Costs							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$167,216,959		\$133,227,648
Contingencies							
Contingencies (25% of Total Construction Cost)					\$163,938,195		\$130,615,341
Total Construction					\$610,563,593		\$473,568,468
Total Construction and Right of Way (Includes Environmental Mitigation)					\$655,752,781		\$522,461,366
Grand Total					\$986,907,935		\$786,304,355

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Sacramento To Bakersfield**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
				I-5 I-80 to Stockton		I-5 Stockton to I-580/SR-120	
Highway Cost							
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	81.4	See Items 3-6	41.5	See Items 3-6
3	Pavement-AC	m2	\$48	195357.2	\$9,462,632	99669.5	\$4,827,750
4	Pavement-PCC	m2	\$65	390714.3	\$25,396,432	199338.9	\$12,957,031
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	586071.5	\$3,832,763	299008.4	\$1,955,441
Other							
1	Overhead Signs	ea	\$20,000	50	\$1,000,000	22	\$440,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	81.4	\$96,099,878	41.5	\$49,029,291
3	Traffic Handling	km	\$347,968	81.4	\$28,324,175	41.5	\$14,450,738
4	Miscellaneous Costs	km	\$559,234	81.4	\$45,520,995	41.5	\$23,224,401
5	City Street Relocation/Reconstruction	km	\$329,327	81.4	\$26,806,808	41.5	\$13,676,592
6	Removals	km	\$323,113	81.4	\$26,301,019	41.5	\$13,418,543
7	Surveillance, Control, & Communications	km	\$124,274	81.4	\$10,115,777	41.5	\$5,160,978
Interchange (includes structure, right-of-way, and mobilization)							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$177,525,000	0	\$0
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	0	\$0	0	\$0
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0	0	\$0
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	1	\$18,200,000	0	\$0
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	1	\$10,340,000	0	\$0
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
9	Sub Overcrossing Bridge Modification	ea	\$200,000	1	\$200,000	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	3	\$48,510,000	1	\$16,170,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	2	\$18,700,000	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	1	\$20,050,000	3	\$60,150,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	13	\$192,725,000	2	\$29,650,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	9	\$8,100,000	2	\$1,800,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	4	\$51,400,000	5	\$64,250,000
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	11	\$9,900,000	3	\$2,700,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
Utility Relocation							
1	Major Utility relocations - Urban	km	\$758,511	3.3	\$2,520,079	7.8	\$5,906,284
2	Major Utility relocations - Suburban	km	\$406,345	43.2	\$17,550,552	10.4	\$4,218,774
3	Major Utility relocations - Undeveloped	km	\$11,919	34.9	\$415,813	23.4	\$278,439
Right-of-Way Items (Interchange Right-of-Way cost not included)							
1	Right-of-way - Urban	Hectares	\$3,499,093	2.4	\$8,370,281	5.6	\$19,617,342
2	Right-of-way - Suburban	Hectares	\$1,166,364	31.1	\$36,271,217	7.5	\$8,718,819
3	Right-of-way - Undeveloped	Hectares	\$291,591	25.1	\$7,323,994	16.8	\$4,904,335
Environmental Mitigation							
Environmental Mitigation (3% of Construction Costs)					\$26,046,508		\$9,727,928
Program Implementation Costs							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$241,288,375		\$93,644,335
Contingencies							
Contingencies (25% of Total Construction Cost)					\$236,557,231		\$91,808,171
Total Construction					\$868,216,923		\$324,264,262
Total Construction and Right of Way (Includes Environmental Mitigation)					\$946,228,923		\$367,232,686
Grand Total					\$1,424,074,529		\$552,685,192



**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Sacramento To Bakersfield**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
				I-5 I-580/SR-120 to SR-152		I-5 SR-152 to SR-99	
<b>Highway Cost</b>							
<b>Main Line</b>				<b>Unit</b>	<b>Unit Cost</b>	<b>Unit</b>	<b>Unit Cost</b>
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	84.4	See Items 3-6	299.3	See Items 3-6
3	Pavement-AC	m2	\$48	202472.9	\$9,807,302	718246.3	\$34,790,126
4	Pavement-PCC	m2	\$65	404945.9	\$26,321,481	1436492.7	\$93,372,023
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	607418.8	\$3,972,369	2154739.0	\$14,091,461
<b>Other</b>							
1	Overhead Signs	ea	\$20,000	26	\$520,000	50	\$1,000,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	84.4	\$99,600,254	299.3	\$353,318,915
3	Traffic Handling	km	\$347,968	84.4	\$29,355,864	299.3	\$104,136,101
4	Miscellaneous Costs	km	\$559,234	84.4	\$47,179,068	299.3	\$167,361,591
5	City Street Relocation/Reconstruction	km	\$329,327	84.4	\$27,783,229	299.3	\$98,557,382
6	Removals	km	\$323,113	84.4	\$27,259,017	299.3	\$96,697,808
7	Surveillance, Control, & Communications	km	\$124,274	84.4	\$10,484,237	299.3	\$37,191,465
<b>Interchange (includes structure, right-of-way, and mobilization)</b>							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	6	\$1,065,150,000	1	\$177,525,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	0	\$0	2	\$47,220,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0	1	\$13,040,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	1	\$9,610,000
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	1	\$200,000
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	0	\$0	0	\$0
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	0	\$0	0	\$0
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	3	\$48,510,000	11	\$177,870,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	2	\$18,700,000	10	\$93,500,000
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	5	\$48,050,000	11	\$105,710,000
13	Und Overcrossing Bridge Modification	ea	\$200,000	5	\$1,000,000	11	\$2,200,000
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	0	\$0	0	\$0
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	0	\$0	0	\$0
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	8	\$102,800,000	1	\$12,850,000
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	7	\$6,300,000	8	\$7,200,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
<b>Utility Relocation</b>							
1	Major Utility relocations - Urban	km	\$758,511	0.0	\$0	25.8	\$19,568,897
2	Major Utility relocations - Suburban	km	\$406,345	0.0	\$0	0.0	\$0
3	Major Utility relocations - Undeveloped	km	\$11,919	84.4	\$1,005,571	273.5	\$3,259,619
<b>Right-of-Way Items (Interchange Right-of-Way cost not included)</b>							
1	Right-of-way - Urban	Hectares	\$3,499,093	0.0	\$0	18.6	\$64,996,831
2	Right-of-way - Suburban	Hectares	\$1,166,364	0.0	\$0	0.0	\$0
3	Right-of-way - Undeveloped	Hectares	\$291,591	60.7	\$17,711,788	196.9	\$57,413,855
<b>Environmental Mitigation</b>							
	Environmental Mitigation (3% of Construction Costs)				\$47,213,952		\$50,108,112
<b>Program Implementation Costs</b>							
	Program Implementation Costs (25.5% of Total Cost and Procurement)				\$417,874,654		\$469,911,242
<b>Contingencies</b>							
	Contingencies (25% of Total Construction Cost)				\$409,681,033		\$460,697,296
<b>Total Construction</b>					\$1,573,798,393		\$1,670,270,387
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>					\$1,638,724,132		\$1,842,789,185
<b>Grand Total</b>					\$2,466,279,819		\$2,773,397,723

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Sacramento To Bakersfield**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
Highway Cost				SR-99 I-5 to SR-58		SR-99 Sacramento to SR-120	
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	38.1	See Items 3-6	100.8	See Items 3-6
3	Pavement-AC	m2	\$48	91320.3	\$4,423,334	241857.3	\$11,714,989
4	Pavement-PCC	m2	\$65	182640.5	\$11,871,635	483714.7	\$31,441,455
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	273960.8	\$1,791,636	725572.0	\$4,745,062
Other							
1	Overhead Signs	ea	\$20,000	20	\$400,000	126	\$2,520,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	38.1	\$44,922,163	100.8	\$118,974,190
3	Traffic Handling	km	\$347,968	38.1	\$13,240,216	100.8	\$35,066,077
4	Miscellaneous Costs	km	\$559,234	38.1	\$21,278,919	100.8	\$56,356,195
5	City Street Relocation/Reconstruction	km	\$329,327	38.1	\$12,530,919	100.8	\$33,187,537
6	Removals	km	\$323,113	38.1	\$12,294,487	100.8	\$32,561,357
7	Surveillance, Control, & Communications	km	\$124,274	38.1	\$4,728,649	100.8	\$12,523,599
Interchange (includes structure, right-of-way, and mobilization)							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$177,525,000	1	\$177,525,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	0	\$0	7	\$165,270,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0	7	\$91,280,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	2	\$19,220,000
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	1	\$200,000
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	2	\$36,400,000	14	\$254,800,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	1	\$10,340,000	14	\$144,760,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	6	\$57,660,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000	1	\$200,000	6	\$1,200,000
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	3	\$48,510,000	2	\$32,340,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	3	\$28,050,000	2	\$18,700,000
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	0	\$0	1	\$20,050,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	2	\$1,800,000	4	\$3,600,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	0	\$0	6	\$88,950,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	26	\$23,400,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	1	\$12,850,000
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	6	\$5,400,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	1	\$3,100,000	1	\$3,100,000
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	2	\$6,200,000
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	6	\$18,600,000
Utility Relocation							
1	Major Utility relocations - Urban	km	\$758,511	7.1	\$5,411,521	20.2	\$15,287,631
2	Major Utility relocations - Suburban	km	\$406,345	11.9	\$4,831,716	65.7	\$26,705,878
3	Major Utility relocations - Undeveloped	km	\$11,919	19.0	\$226,769	14.9	\$177,564
Right-of-Way Items (Interchange Right-of-Way cost not included)							
1	Right-of-way - Urban	Hectares	\$3,499,093	5.1	\$17,974,019	14.5	\$50,776,882
2	Right-of-way - Suburban	Hectares	\$1,166,364	8.6	\$9,985,566	47.3	\$55,192,264
3	Right-of-way - Undeveloped	Hectares	\$291,591	13.7	\$3,994,226	10.7	\$3,127,561
Environmental Mitigation							
Environmental Mitigation (3% of Construction Costs)					\$13,892,909		\$45,790,996
Program Implementation Costs							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$129,780,639		\$428,719,831
Contingencies							
Contingencies (25% of Total Construction Cost)					\$127,235,921		\$420,313,559
Total Construction					\$463,096,963		\$1,526,366,534
Total Construction and Right of Way (Includes Environmental Mitigation)					\$508,943,684		\$1,681,254,237
Grand Total					\$765,960,244		\$2,530,287,627

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Sacramento To Bakersfield**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
Highway Cost				SR-99 SR-120 to Modesto		SR-99 Modesto to Merced	
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	23.3	See Items 3-6	62.8	See Items 3-6
3	Pavement-AC	m2	\$48	56035.5	\$2,714,226	150666.6	\$7,297,928
4	Pavement-PCC	m2	\$65	112071.0	\$7,284,617	301333.2	\$19,586,657
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	168106.6	\$1,099,375	451999.8	\$2,955,967
Other							
1	Overhead Signs	ea	\$20,000	20	\$400,000	54	\$1,080,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	23.3	\$27,564,928	62.8	\$74,115,739
3	Traffic Handling	km	\$347,968	23.3	\$8,124,400	62.8	\$21,844,639
4	Miscellaneous Costs	km	\$559,234	23.3	\$13,057,071	62.8	\$35,107,455
5	City Street Relocation/Reconstruction	km	\$329,327	23.3	\$7,689,164	62.8	\$20,674,390
6	Removals	km	\$323,113	23.3	\$7,544,085	62.8	\$20,284,307
7	Surveillance, Control, & Communications	km	\$124,274	23.3	\$2,901,571	62.8	\$7,801,657
Interchange (includes structure, right-of-way, and mobilization)							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$177,525,000	0	\$0
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	3	\$70,830,000	1	\$23,610,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	2	\$26,080,000	0	\$0
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	3	\$28,830,000
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	2	\$400,000
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	0	\$0	4	\$72,800,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	0	\$0	4	\$41,360,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	3	\$28,830,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	2	\$400,000
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	3	\$48,510,000	1	\$16,170,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	2	\$18,700,000	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	1	\$9,610,000
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	0	\$0	9	\$180,450,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	2	\$1,800,000	7	\$6,300,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	0	\$0	2	\$29,650,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	9	\$8,100,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	4	\$51,400,000
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	1	\$900,000	5	\$4,500,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	1	\$3,100,000
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	1	\$3,100,000
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
Utility Relocation							
1	Major Utility relocations - Urban	km	\$758,511	14.0	\$10,625,896	24.5	\$18,562,810
2	Major Utility relocations - Suburban	km	\$406,345	0.0	\$0	26.6	\$10,809,090
3	Major Utility relocations - Undeveloped	km	\$11,919	9.3	\$111,319	11.7	\$139,509
Right-of-Way Items (Interchange Right-of-Way cost not included)							
1	Right-of-way - Urban	Hectares	\$3,499,093	10.1	\$35,293,228	17.6	\$61,655,177
2	Right-of-way - Suburban	Hectares	\$1,166,364	0.0	\$0	19.2	\$22,338,832
3	Right-of-way - Undeveloped	Hectares	\$291,591	6.7	\$1,960,735	8.4	\$2,457,271
Environmental Mitigation							
Environmental Mitigation (3% of Construction Costs)					\$13,292,150		\$22,466,104
Program Implementation Costs							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$125,872,530		\$218,735,821
Contingencies							
Contingencies (25% of Total Construction Cost)					\$123,404,441		\$214,446,883
Total Construction							
Total Construction					\$443,071,652		\$748,870,147
Total Construction and Right of Way (Includes Environmental Mitigation)							
Total Construction and Right of Way					\$493,617,765		\$857,787,532
Grand Total							
Grand Total					\$742,894,736		\$1,290,970,235

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Sacramento To Bakersfield**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
				SR-99 Merced to SR-152		SR-99 SR-152 to Fresno	
Highway Cost							
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	34.6	See Items 3-6	53.7	See Items 3-6
3	Pavement-AC	m2	\$48	82956.6	\$4,018,219	128905.1	\$6,243,854
4	Pavement-PCC	m2	\$65	165913.2	\$10,784,360	257810.2	\$16,757,666
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	248869.9	\$1,627,547	386715.4	\$2,529,023
Other							
1	Overhead Signs	ea	\$20,000	16	\$320,000	46	\$920,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	34.6	\$40,807,924	53.7	\$63,410,861
3	Traffic Handling	km	\$347,968	34.6	\$12,027,599	53.7	\$18,689,517
4	Miscellaneous Costs	km	\$559,234	34.6	\$19,330,069	53.7	\$30,036,724
5	City Street Relocation/Reconstruction	km	\$329,327	34.6	\$11,383,263	53.7	\$17,688,293
6	Removals	km	\$323,113	34.6	\$11,168,485	53.7	\$17,354,552
7	Surveillance, Control, & Communications	km	\$124,274	34.6	\$4,295,571	53.7	\$6,674,828
Interchange (includes structure, right-of-way, and mobilization)							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	0	\$0	1	\$177,525,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	0	\$0	3	\$70,830,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0	3	\$39,120,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	1	\$18,200,000	5	\$91,000,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	0	\$0	4	\$41,360,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	6	\$57,660,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	6	\$1,200,000
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	2	\$32,340,000	3	\$48,510,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	1	\$9,350,000	2	\$18,700,000
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	1	\$9,610,000
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	1	\$200,000
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	0	\$0	1	\$20,050,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	4	\$59,300,000	1	\$14,825,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	1	\$900,000	1	\$900,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	4	\$3,600,000	1	\$900,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	1	\$3,100,000
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
Utility Relocation							
1	Major Utility relocations - Urban	km	\$758,511	0.0	\$0	10.7	\$8,148,001
2	Major Utility relocations - Suburban	km	\$406,345	16.0	\$6,482,508	30.9	\$12,549,377
3	Major Utility relocations - Undeveloped	km	\$11,919	18.6	\$221,846	12.1	\$144,045
Right-of-Way Items (Interchange Right-of-Way cost not included)							
1	Right-of-way - Urban	Hectares	\$3,499,093	0.0	\$0	7.7	\$27,063,062
2	Right-of-way - Suburban	Hectares	\$1,166,364	11.5	\$13,397,212	22.2	\$25,935,434
3	Right-of-way - Undeveloped	Hectares	\$291,591	13.4	\$3,907,519	8.7	\$2,537,162
Environmental Mitigation							
Environmental Mitigation (3% of Construction Costs)					\$7,384,722		\$23,899,102
Program Implementation Costs							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$69,065,946		\$223,398,233
Contingencies							
Contingencies (25% of Total Construction Cost)					\$67,711,711		\$219,017,875
Total Construction					\$246,157,392		\$796,636,741
Total Construction and Right of Way (Includes Environmental Mitigation)					\$270,846,845		\$876,071,501
Grand Total					\$407,624,502		\$1,318,487,609

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Sacramento To Bakersfield**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
Highway Cost				SR-99 Fresno to Tulare/Visalia		SR-99 Tulare/Visalia to SR-58	
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	74.7	See Items 3-6	110.8	See Items 3-6
3	Pavement-AC	m2	\$48	179179.7	\$8,679,036	265979.4	\$12,883,401
4	Pavement-PCC	m2	\$65	358359.5	\$23,293,365	531958.7	\$34,577,317
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	537539.2	\$3,515,374	797938.1	\$5,218,318
Other							
1	Overhead Signs	ea	\$20,000	42	\$840,000	72	\$1,440,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	74.7	\$88,141,890	110.8	\$130,840,263
3	Traffic Handling	km	\$347,968	74.7	\$25,978,662	110.8	\$38,563,446
4	Miscellaneous Costs	km	\$559,234	74.7	\$41,751,422	110.8	\$61,976,967
5	City Street Relocation/Reconstruction	km	\$329,327	74.7	\$24,586,948	110.8	\$36,497,547
6	Removals	km	\$323,113	74.7	\$24,123,044	110.8	\$35,808,914
7	Surveillance, Control, & Communications	km	\$124,274	74.7	\$9,278,094	110.8	\$13,772,659
Interchange (includes structure, right-of-way, and mobilization)							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$177,525,000	2	\$355,050,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	4	\$94,440,000	6	\$141,660,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	3	\$39,120,000	6	\$78,240,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	1	\$9,610,000
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	2	\$36,400,000	7	\$127,400,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	1	\$10,340,000	6	\$62,040,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	2	\$19,220,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	2	\$400,000
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	2	\$32,340,000	3	\$48,510,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	2	\$18,700,000	3	\$28,050,000
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	2	\$40,100,000	1	\$20,050,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	1	\$900,000	2	\$1,800,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	4	\$59,300,000	1	\$14,825,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	3	\$2,700,000	3	\$2,700,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	1	\$12,850,000
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	2	\$1,800,000	2	\$1,800,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	1	\$3,100,000
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	1	\$3,100,000	1	\$3,100,000
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
Utility Relocation							
1	Major Utility relocations - Urban	km	\$758,511	24.9	\$18,876,373	37.7	\$28,581,023
2	Major Utility relocations - Suburban	km	\$406,345	32.4	\$13,146,046	51.0	\$20,715,238
3	Major Utility relocations - Undeveloped	km	\$11,919	17.4	\$207,640	22.2	\$264,194
Right-of-Way Items (Interchange Right-of-Way cost not included)							
1	Right-of-way - Urban	Hectares	\$3,499,093	17.9	\$62,696,657	27.1	\$94,930,028
2	Right-of-way - Suburban	Hectares	\$1,166,364	23.3	\$27,168,551	36.7	\$42,811,581
3	Right-of-way - Undeveloped	Hectares	\$291,591	12.5	\$3,657,304	16.0	\$4,653,432
Environmental Mitigation							
Environmental Mitigation (3% of Construction Costs)					\$24,552,087		\$40,546,329
Program Implementation Costs							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$238,801,761		\$391,293,843
Contingencies							
Contingencies (25% of Total Construction Cost)					\$234,119,373		\$383,621,414
Total Construction					\$818,402,893		\$1,351,544,288
Total Construction and Right of Way (Includes Environmental Mitigation)					\$936,477,492		\$1,534,485,657
Grand Total					\$1,409,398,626		\$2,309,400,914



**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Bakersfield to Los Angeles**

			UNIT	UNIT PRICE	Highway Segments			
Highway Cost					I-5 SR-99 to SR-14		I-5 SR-14 to I-405	
Main Line					Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A		2	See Items 3-6	4	See Items 3-6
2	Length of Highway	km	N/A		104.6	See Items 3-6	4.1	See Items 3-6
3	Pavement-AC	m2	\$48		251041.4	\$12,159,844	0.0	\$0
4	Pavement-PCC	m2	\$65		502082.9	\$32,635,387	58542.9	\$3,805,288
5	Separate Aerial Structure	m2	\$1,346		0.0	\$0	106556.2	\$143,424,651
6	Earthwork	m3	\$7		753124.3	\$4,925,247	17359.6	\$113,527
<b>Other</b>								
1	Overhead Signs	ea	\$20,000		38	\$760,000	2	\$40,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605		104.6	\$123,492,018	4.1	\$4,799,726
3	Traffic Handling	km	\$347,968		104.6	\$36,397,647	4.1	\$1,414,656
4	Miscellaneous Costs	km	\$559,234		104.6	\$58,496,219	4.1	\$2,273,554
5	City Street Relocation/Reconstruction	km	\$329,327		104.6	\$34,447,773	4.1	\$1,338,871
6	Removals	km	\$323,113		104.6	\$33,797,815	4.1	\$1,313,609
7	Surveillance, Control, & Communications	km	\$124,274		104.6	\$12,999,160	4.1	\$505,234
<b>Interchange (includes structure, right-of-way, and mobilization)</b>								
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000		4	\$710,100,000	2	\$355,050,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000		0	\$0	0	\$0
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000		0	\$0	0	\$0
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000		0	\$0	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000		0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000		3	\$54,600,000	0	\$0
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000		3	\$31,020,000	0	\$0
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000		0	\$0	1	\$9,610,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000		0	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000		3	\$48,510,000	0	\$0
11	Und Overcrossing Ramp Modification	ea	\$9,350,000		2	\$18,700,000	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000		1	\$9,610,000	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000		1	\$200,000	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000		0	\$0	0	\$0
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000		0	\$0	0	\$0
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000		3	\$44,475,000	1	\$14,825,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000		3	\$2,700,000	2	\$1,800,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000		4	\$51,400,000	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000		2	\$1,800,000	1	\$900,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000		0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000		1	\$3,100,000	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000		0	\$0	0	\$0
<b>Utility Relocation</b>								
1	Major Utility relocations - Urban	km	\$758,511		0.0	\$0	0.0	\$0
2	Major Utility relocations - Suburban	km	\$406,345		52.3	\$21,251,988	3.5	\$1,415,990
3	Major Utility relocations - Undeveloped	km	\$11,919		52.3	\$623,392	0.6	\$6,923
<b>Right-of-Way Items (Interchange Right-of-Way cost not included)</b>								
1	Right-of-way - Urban	Hectares	\$3,499,093		0.0	\$0	0.0	\$0
2	Right-of-way - Suburban	Hectares	\$1,166,364		37.7	\$43,920,868	1.5	\$1,735,510
3	Right-of-way - Undeveloped	Hectares	\$291,591		37.7	\$10,980,215	0.2	\$72,313
<b>Environmental Mitigation</b>								
Environmental Mitigation (3% of Construction Costs)						\$40,446,045		\$16,279,111
<b>Program Implementation Costs</b>								
Program Implementation Costs (25.5% of Total Cost and Procurement)						\$368,104,898		\$142,984,611
<b>Contingencies</b>								
Contingencies (25% of Total Construction Cost)						\$360,887,155		\$140,180,991
<b>Total Construction</b>						\$1,348,201,491		\$542,637,031
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>						\$1,443,548,619		\$560,723,965
<b>Grand Total</b>						\$2,172,540,671		\$843,889,567

**QUANTITY WORKSHEET - Modal Alternative  
CAPITAL COST ESTIMATES  
CA HSRA PROGRAM EIR/EIS  
Bakersfield to Los Angeles**

			UNIT	UNIT PRICE	Highway Segments		
Highway Cost					I-5 I-405 to Burbank	I-5 Burbank to Los Angeles	
Main Line					Unit	Unit Cost	Unit
1	No. of additional lanes in both directions	ea	N/A	4	See Items 3-6	4	See Items 3-6
2	Length of Highway	km	N/A	24.6	See Items 3-6	12.0	See Items 3-6
3	Pavement-AC	m2	\$48	118215.1	\$5,726,056	57475.8	\$2,783,988
4	Pavement-PCC	m2	\$65	236430.2	\$15,367,966	114951.6	\$7,471,851
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	354645.4	\$2,319,293	172427.3	\$1,127,632
Other							
1	Overhead Signs	ea	\$20,000	38	\$760,000	28	\$560,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	24.6	\$29,076,124	12.0	\$14,136,709
3	Traffic Handling	km	\$347,968	24.6	\$8,569,805	12.0	\$4,166,609
4	Miscellaneous Costs	km	\$559,234	24.6	\$13,772,901	12.0	\$6,696,336
5	City Street Relocation/Reconstruction	km	\$329,327	24.6	\$8,110,708	12.0	\$3,943,398
6	Removals	km	\$323,113	24.6	\$7,957,676	12.0	\$3,868,994
7	Surveillance, Control, & Communications	km	\$124,274	24.6	\$3,060,645	12.0	\$1,488,075
Interchange (includes structure, right-of-way, and mobilization)							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	2	\$355,050,000	3	\$532,575,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	1	\$23,610,000	1	\$23,610,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0	0	\$0
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	3	\$54,600,000	3	\$54,600,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	2	\$20,680,000	2	\$20,680,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	1	\$9,610,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	1	\$200,000
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	0	\$0	1	\$16,170,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	5	\$100,250,000	0	\$0
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	3	\$2,700,000	4	\$3,600,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	8	\$118,600,000	6	\$88,950,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	3	\$2,700,000	7	\$6,300,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	1	\$3,100,000
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
Utility Relocation							
1	Major Utility relocations - Urban	km	\$758,511	7.9	\$6,004,522	2.0	\$1,513,751
2	Major Utility relocations - Suburban	km	\$406,345	16.7	\$6,790,828	9.6	\$3,892,503
3	Major Utility relocations - Undeveloped	km	\$11,919	0.0	\$0	0.4	\$4,758
Right-of-Way Items (Interchange Right-of-Way cost not included)							
1	Right-of-way - Urban	Hectares	\$3,499,093	11.4	\$39,887,265	2.9	\$10,055,655
2	Right-of-way - Suburban	Hectares	\$1,166,364	24.1	\$28,068,816	13.8	\$16,089,047
3	Right-of-way - Undeveloped	Hectares	\$291,591	0.0	\$0	0.6	\$167,594
Environmental Mitigation							
Environmental Mitigation (3% of Construction Costs)					\$23,859,496		\$24,331,488
Program Implementation Costs							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$226,218,686		\$219,731,814
Contingencies							
Contingencies (25% of Total Construction Cost)					\$221,783,025		\$215,423,347
Total Construction							
					\$795,316,523		\$811,049,604
Total Construction and Right of Way (Includes Environmental Mitigation)							
					\$887,132,100		\$861,693,388
Grand Total							
					\$1,335,133,811		\$1,296,848,550

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Bakersfield to Los Angeles**

			UNIT	UNIT PRICE	Highway Segments		
Highway Cost					SR-58/14 SR-99 to Palmdale	SR-14 Palmdale to I-5	
Main Line					Unit	Unit Cost	Unit
1	No. of additional lanes in both directions	ea	N/A	0	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	156.2	See Items 3-6	56.1	See Items 3-6
3	Pavement-AC	m2	\$48	0.0	\$0	134554.0	\$6,517,471
4	Pavement-PCC	m2	\$65	0.0	\$0	269107.9	\$17,492,016
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	0.0	\$0	403661.9	\$2,639,849
Other							
1	Overhead Signs	ea	\$20,000	88	\$0	28	\$560,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	156.2	\$0	56.1	\$66,189,637
3	Traffic Handling	km	\$347,968	156.2	\$0	56.1	\$19,508,524
4	Miscellaneous Costs	km	\$559,234	156.2	\$0	56.1	\$31,352,986
5	City Street Relocation/Reconstruction	km	\$329,327	156.2	\$0	56.1	\$18,463,425
6	Removals	km	\$323,113	156.2	\$0	56.1	\$18,115,058
7	Surveillance, Control, & Communications	km	\$124,274	156.2	\$0	56.1	\$6,967,330
Interchange (includes structure, right-of-way, and mobilization)							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$0	2	\$355,050,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	0	\$0	0	\$0
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0	0	\$0
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	7	\$0	2	\$36,400,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	7	\$0	2	\$20,680,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	5	\$0	1	\$9,610,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000	4	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	6	\$0	1	\$16,170,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	5	\$0	1	\$9,350,000
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	5	\$0	1	\$9,610,000
13	Und Overcrossing Bridge Modification	ea	\$200,000	4	\$0	1	\$200,000
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	0	\$0	0	\$0
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	11	\$0	5	\$74,125,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	11	\$0	11	\$9,900,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	8	\$0	2	\$25,700,000
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	5	\$0	3	\$2,700,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	1	\$3,100,000
Utility Relocation							
1	Major Utility relocations - Urban	km	\$758,511	0.0	\$0	0.0	\$0
2	Major Utility relocations - Suburban	km	\$406,345	91.0	\$0	37.4	\$15,187,609
3	Major Utility relocations - Undeveloped	km	\$11,919	65.3	\$0	18.7	\$222,752
Right-of-Way Items (Interchange Right-of-Way cost not included)							
1	Right-of-way - Urban	Hectares	\$3,499,093	0.0	\$0	0.0	\$0
2	Right-of-way - Suburban	Hectares	\$1,166,364	0.0	\$0	26.9	\$31,387,792
3	Right-of-way - Undeveloped	Hectares	\$291,591	0.0	\$0	13.5	\$3,923,473
Environmental Mitigation							
Environmental Mitigation (3% of Construction Costs)					\$0		\$23,274,350
Program Implementation Costs							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$0		\$212,771,305
Contingencies							
Contingencies (25% of Total Construction Cost)					\$0		\$208,599,318
Total Construction							
					\$0		\$775,811,658
Total Construction and Right of Way (Includes Environmental Mitigation)							
					\$0		\$834,397,273
Grand Total							
					\$0		\$1,255,767,895

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Los Angeles - Riverside - San Diego**

COST ELEMENTS			UNIT	UNIT PRICE	Highway Segments			
					I-10 I-5 to East San Gabriel Valley		I-10 East San Gabriel Valley to Ontario Airport	
Highway Cost								
Main Line					Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A		2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A		46.1	See Items 3-6	24.3	See Items 3-6
3	Pavement-AC	m2	\$48		110632.1	\$5,358,752	58319.3	\$2,824,848
4	Pavement-PCC	m2	\$65		221264.2	\$14,382,170	116638.7	\$7,581,514
5	Separate Aerial Structure	m2	\$1,346		0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7		331896.2	\$2,170,519	174958.0	\$1,144,182
Other								
1	Overhead Signs	ea	\$20,000		66	\$1,320,000	34	\$680,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605		46.1	\$54,422,004	24.3	\$28,688,381
3	Traffic Handling	km	\$347,968		46.1	\$16,040,170	24.3	\$8,455,523
4	Miscellaneous Costs	km	\$559,234		46.1	\$25,778,844	24.3	\$13,589,233
5	City Street Relocation/Reconstruction	km	\$329,327		46.1	\$15,180,875	24.3	\$8,002,548
6	Removals	km	\$323,113		46.1	\$14,894,443	24.3	\$7,851,557
7	Surveillance, Control, & Communications	km	\$124,274		46.1	\$5,728,632	24.3	\$3,019,830
Interchange (includes structure, right-of-way, and mobilization)								
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000		3	\$532,575,000	3	\$532,575,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000		1	\$23,610,000	1	\$23,610,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000		0	\$0	1	\$13,040,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000		0	\$0	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000		0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000		3	\$54,600,000	2	\$36,400,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000		3	\$31,020,000	1	\$10,340,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000		2	\$19,220,000	2	\$19,220,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000		1	\$200,000	2	\$400,000
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000		0	\$0	0	\$0
11	Und Overcrossing Ramp Modification	ea	\$9,350,000		0	\$0	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000		0	\$0	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000		0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000		3	\$60,150,000	4	\$80,200,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000		1	\$900,000	1	\$900,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000		20	\$296,500,000	7	\$103,775,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000		12	\$10,800,000	4	\$3,600,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000		0	\$0	1	\$12,850,000
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000		0	\$0	0	\$0
20	Urb At-Grade Interchange Modification	ea	\$3,100,000		0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000		3	\$9,300,000	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000		0	\$0	0	\$0
Utility Relocation								
1	Major Utility relocations - Urban	km	\$758,511		4.4	\$3,362,007	5.9	\$4,449,012
2	Major Utility relocations - Suburban	km	\$406,345		41.7	\$16,930,108	15.1	\$6,128,740
3	Major Utility relocations - Undeveloped	km	\$11,919		0.0	\$0	3.4	\$39,950
Right-of-Way Items (Interchange Right-of-Way cost not included)								
1	Right-of-way - Urban	Hectares	\$3,499,093		3.2	\$11,166,690	4.2	\$14,777,105
2	Right-of-way - Suburban	Hectares	\$1,166,364		30.0	\$34,988,963	10.9	\$12,666,090
3	Right-of-way - Undeveloped	Hectares	\$291,591		0.0	\$0	2.4	\$703,672
Environmental Mitigation								
Environmental Mitigation (3% of Construction Costs)						\$36,433,306		\$27,880,960
Program Implementation Costs								
Program Implementation Costs (25.5% of Total Cost and Procurement)						\$330,743,283		\$251,275,252
Contingencies								
Contingencies (25% of Total Construction Cost)						\$324,258,121		\$246,348,286
<b>Total Construction</b>						<b>\$1,214,443,525</b>		<b>\$929,365,318</b>
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>						<b>\$1,297,032,484</b>		<b>\$985,393,144</b>
<b>Grand Total</b>						<b>\$1,952,033,888</b>		<b>\$1,483,016,682</b>

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Los Angeles - Riverside - San Diego**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
Highway Cost				I-10 Ontario Airport to I-15		I-10 I-15 to I-215	
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	4.5	See Items 3-6	23.0	See Items 3-6
3	Pavement-AC	m2	\$48	10871.0	\$526,564	55223.5	\$2,674,895
4	Pavement-PCC	m2	\$65	21742.0	\$1,413,228	110447.1	\$7,179,059
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	32613.0	\$213,281	165670.6	\$1,083,445
Other							
1	Overhead Signs	ea	\$20,000	4	\$80,000	24	\$480,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	4.5	\$5,347,644	23.0	\$27,165,497
3	Traffic Handling	km	\$347,968	4.5	\$1,576,148	23.0	\$8,006,673
4	Miscellaneous Costs	km	\$559,234	4.5	\$2,533,094	23.0	\$12,867,867
5	City Street Relocation/Reconstruction	km	\$329,327	4.5	\$1,491,711	23.0	\$7,577,744
6	Removals	km	\$323,113	4.5	\$1,463,566	23.0	\$7,434,768
7	Surveillance, Control, & Communications	km	\$124,274	4.5	\$562,910	23.0	\$2,859,526
Interchange (includes structure, right-of-way, and mobilization)							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$177,525,000	1	\$177,525,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	1	\$23,610,000	3	\$70,830,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	1	\$13,040,000	3	\$39,120,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	1	\$9,610,000
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	0	\$0	1	\$18,200,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	0	\$0	1	\$10,340,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	0	\$0	1	\$16,170,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	0	\$0	0	\$0
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	1	\$900,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	0	\$0	1	\$14,825,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	1	\$900,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	1	\$12,850,000
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	1	\$900,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	1	\$3,100,000
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
Utility Relocation							
1	Major Utility relocations - Urban	km	\$758,511	3.0	\$2,290,491	12.2	\$9,239,930
2	Major Utility relocations - Suburban	km	\$406,345	0.0	\$0	5.4	\$2,199,983
3	Major Utility relocations - Undeveloped	km	\$11,919	1.5	\$17,997	5.4	\$64,533
Right-of-Way Items (Interchange Right-of-Way cost not included)							
1	Right-of-way - Urban	Hectares	\$3,499,093	2.2	\$7,607,719	8.8	\$30,689,833
2	Right-of-way - Suburban	Hectares	\$1,166,364	0.0	\$0	3.9	\$4,546,642
3	Right-of-way - Undeveloped	Hectares	\$291,591	1.1	\$316,988	3.9	\$1,136,660
Environmental Mitigation							
Environmental Mitigation (3% of Construction Costs)					\$6,950,749		\$13,923,118
Program Implementation Costs							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$62,874,608		\$131,172,044
Contingencies							
Contingencies (25% of Total Construction Cost)					\$61,641,773		\$128,600,043
<b>Total Construction</b>					<b>\$231,691,634</b>		<b>\$464,103,920</b>
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>					<b>\$246,567,090</b>		<b>\$514,400,172</b>
<b>Grand Total</b>					<b>\$371,083,471</b>		<b>\$774,172,259</b>



**QUANTITY WORKSHEET - Modal Alternative  
CAPITAL COST ESTIMATES  
CA HSRA PROGRAM EIR/EIS  
Los Angeles - Riverside - San Diego**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
Highway Cost				I-15 I-10 to I-215		I-215 Riverside to I-15	
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	74.6	See Items 3-6	56.0	See Items 3-6
3	Pavement-AC	m2	\$48	179003.7	\$8,670,508	134472.2	\$6,513,509
4	Pavement-PCC	m2	\$65	358007.4	\$23,270,479	268944.3	\$17,481,382
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	537011.0	\$3,511,920	403416.5	\$2,638,244
<b>Other</b>							
1	Overhead Signs	ea	\$20,000	42	\$840,000	50	\$1,000,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	74.6	\$88,055,288	56.0	\$66,149,394
3	Traffic Handling	km	\$347,968	74.6	\$25,953,137	56.0	\$19,496,664
4	Miscellaneous Costs	km	\$559,234	74.6	\$41,710,400	56.0	\$31,333,924
5	City Street Relocation/Reconstruction	km	\$329,327	74.6	\$24,562,791	56.0	\$18,452,200
6	Removals	km	\$323,113	74.6	\$24,099,342	56.0	\$18,104,045
7	Surveillance, Control, & Communications	km	\$124,274	74.6	\$9,268,978	56.0	\$6,963,094
<b>Interchange (includes structure, right-of-way, and mobilization)</b>							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	4	\$710,100,000	3	\$532,575,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	2	\$47,220,000	1	\$23,610,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	1	\$13,040,000	1	\$13,040,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	3	\$54,600,000	5	\$91,000,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	2	\$20,680,000	4	\$41,360,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	3	\$28,830,000	2	\$19,220,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000	3	\$600,000	1	\$200,000
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	1	\$16,170,000	5	\$80,850,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	1	\$9,350,000	5	\$46,750,000
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	1	\$9,610,000
13	Und Overcrossing Bridge Modification	ea	\$200,000	1	\$200,000	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	5	\$100,250,000	0	\$0
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	10	\$9,000,000	3	\$2,700,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	5	\$74,125,000	3	\$44,475,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	5	\$4,500,000	4	\$3,600,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	1	\$12,850,000	1	\$12,850,000
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	4	\$3,600,000	0	\$0
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
<b>Utility Relocation</b>							
1	Major Utility relocations - Urban	km	\$758,511	30.1	\$22,846,982	8.6	\$6,538,377
2	Major Utility relocations - Suburban	km	\$406,345	31.6	\$12,822,286	28.7	\$11,675,673
3	Major Utility relocations - Undeveloped	km	\$11,919	12.9	\$153,867	18.7	\$222,616
<b>Right-of-Way Items (Interchange Right-of-Way cost not included)</b>							
1	Right-of-way - Urban	Hectares	\$3,499,093	21.7	\$75,884,779	6.2	\$21,716,798
2	Right-of-way - Suburban	Hectares	\$1,166,364	22.7	\$26,499,447	20.7	\$24,129,776
3	Right-of-way - Undeveloped	Hectares	\$291,591	9.3	\$2,710,170	13.4	\$3,921,088
<b>Environmental Mitigation</b>							
Environmental Mitigation (3% of Construction Costs)					\$42,014,729		\$33,852,274
<b>Program Implementation Costs</b>							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$394,638,026		\$309,067,410
<b>Contingencies</b>							
Contingencies (25% of Total Construction Cost)					\$386,900,026		\$303,007,264
<b>Total Construction</b>					\$1,400,490,978		\$1,128,409,121
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>					\$1,547,600,103		\$1,212,029,057
<b>Grand Total</b>					\$2,329,138,154		\$1,824,103,731

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Los Angeles - Riverside - San Diego**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
Highway Cost				I-215 I-10 to Riverside		I-15 I-215 to Temecula	
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	10.9	See Items 3-6	8.1	See Items 3-6
3	Pavement-AC	m2	\$48	26270.6	\$1,272,484	19472.6	\$943,205
4	Pavement-PCC	m2	\$65	52541.2	\$3,415,176	38945.2	\$2,531,436
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	78811.7	\$515,409	58417.8	\$382,038
<b>Other</b>							
1	Overhead Signs	ea	\$20,000	6	\$120,000	2	\$40,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	10.9	\$12,922,995	8.1	\$9,578,932
3	Traffic Handling	km	\$347,968	10.9	\$3,808,883	8.1	\$2,823,264
4	Miscellaneous Costs	km	\$559,234	10.9	\$6,121,419	8.1	\$4,537,389
5	City Street Relocation/Reconstruction	km	\$329,327	10.9	\$3,604,835	8.1	\$2,672,018
6	Removals	km	\$323,113	10.9	\$3,536,820	8.1	\$2,621,602
7	Surveillance, Control, & Communications	km	\$124,274	10.9	\$1,360,315	8.1	\$1,008,309
<b>Interchange (includes structure, right-of-way, and mobilization)</b>							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$177,525,000	0	\$0
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	0	\$0	1	\$23,610,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0	0	\$0
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	2	\$36,400,000	0	\$0
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	1	\$10,340,000	0	\$0
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	0	\$0	0	\$0
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	0	\$0	0	\$0
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	0	\$0	0	\$0
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	3	\$2,700,000	0	\$0
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
<b>Utility Relocation</b>							
1	Major Utility relocations - Urban	km	\$758,511	1.4	\$1,037,841	8.1	\$6,154,241
2	Major Utility relocations - Suburban	km	\$406,345	9.6	\$3,891,902	0.0	\$0
3	Major Utility relocations - Undeveloped	km	\$11,919	0.0	\$0	0.0	\$0
<b>Right-of-Way Items (Interchange Right-of-Way cost not included)</b>							
1	Right-of-way - Urban	Hectares	\$3,499,093	1.0	\$3,447,121	5.8	\$20,440,916
2	Right-of-way - Suburban	Hectares	\$1,166,364	6.9	\$8,043,281	0.0	\$0
3	Right-of-way - Undeveloped	Hectares	\$291,591	0.0	\$0	0.0	\$0
<b>Environmental Mitigation</b>							
Environmental Mitigation (3% of Construction Costs)					\$8,345,492		\$1,707,073
<b>Program Implementation Costs</b>							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$75,994,838		\$20,157,858
<b>Contingencies</b>							
Contingencies (25% of Total Construction Cost)					\$74,504,743		\$19,762,606
<b>Total Construction</b>					\$278,183,078		\$56,902,434
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>					\$298,018,972		\$79,050,423
<b>Grand Total</b>					\$448,518,554		\$118,970,886

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Los Angeles - Riverside - San Diego**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
Highway Cost				I-15 Temecula to Escondido		I-15 Escondido to Mira Mesa	
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	42.9	See Items 3-6	24.8	See Items 3-6
3	Pavement-AC	m2	\$48	102939.1	\$4,986,125	59510.9	\$2,882,566
4	Pavement-PCC	m2	\$65	205878.3	\$13,382,088	119021.8	\$7,736,419
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	308817.4	\$2,019,590	178532.7	\$1,167,560
<b>Other</b>							
1	Overhead Signs	ea	\$20,000	18	\$360,000	28	\$560,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	42.9	\$50,637,705	24.8	\$29,274,542
3	Traffic Handling	km	\$347,968	42.9	\$14,924,797	24.8	\$8,628,286
4	Miscellaneous Costs	km	\$559,234	42.9	\$23,986,281	24.8	\$13,866,888
5	City Street Relocation/Reconstruction	km	\$329,327	42.9	\$14,125,255	24.8	\$8,166,056
6	Removals	km	\$323,113	42.9	\$13,858,740	24.8	\$8,011,980
7	Surveillance, Control, & Communications	km	\$124,274	42.9	\$5,330,285	24.8	\$3,081,531
<b>Interchange (includes structure, right-of-way, and mobilization)</b>							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	0	\$0	1	\$177,525,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	1	\$23,610,000	1	\$23,610,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0	0	\$0
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	1	\$18,200,000	2	\$36,400,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	0	\$0	2	\$20,680,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	2	\$32,340,000	0	\$0
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	2	\$18,700,000	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	0	\$0	3	\$60,150,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	2	\$1,800,000	4	\$3,600,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	2	\$29,650,000	6	\$88,950,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	4	\$3,600,000	5	\$4,500,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	1	\$12,850,000	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	6	\$5,400,000	0	\$0
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
<b>Utility Relocation</b>							
1	Major Utility relocations - Urban	km	\$758,511	5.6	\$4,243,507	9.3	\$7,053,080
2	Major Utility relocations - Suburban	km	\$406,345	14.9	\$6,062,152	15.5	\$6,297,393
3	Major Utility relocations - Undeveloped	km	\$11,919	22.4	\$266,735	0.0	\$0
<b>Right-of-Way Items (Interchange Right-of-Way cost not included)</b>							
1	Right-of-way - Urban	Hectares	\$3,499,093	4.0	\$14,094,534	6.7	\$23,426,352
2	Right-of-way - Suburban	Hectares	\$1,166,364	10.7	\$12,528,475	11.2	\$13,014,640
3	Right-of-way - Undeveloped	Hectares	\$291,591	16.1	\$4,698,177	0.0	\$0
<b>Environmental Mitigation</b>							
	Environmental Mitigation (3% of Construction Costs)				\$9,586,598		\$15,364,239
<b>Program Implementation Costs</b>							
	Program Implementation Costs (25.5% of Total Cost and Procurement)				\$91,917,566		\$143,806,366
<b>Contingencies</b>							
	Contingencies (25% of Total Construction Cost)				\$90,115,261		\$140,986,633
<b>Total Construction</b>					\$319,553,260		\$512,141,302
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>					\$360,461,043		\$563,946,532
<b>Grand Total</b>					\$542,493,870		\$848,739,531

**QUANTITY WORKSHEET - Modal Alternative  
CAPITAL COST ESTIMATES  
CA HSRA PROGRAM EIR/EIS  
Los Angeles - Riverside - San Diego**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
Highway Cost				I-15 Mira Mesa to SR-163		SR-163 I-15 to I-8	
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	6.6	See Items 3-6	12.3	See Items 3-6
3	Pavement-AC	m2	\$48	15806.2	\$765,616	29509.2	\$1,429,357
4	Pavement-PCC	m2	\$65	31612.5	\$2,054,810	59018.5	\$3,836,202
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	47418.7	\$310,107	88527.7	\$578,949
<b>Other</b>							
1	Overhead Signs	ea	\$20,000	4	\$80,000	16	\$320,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	6.6	\$7,775,384	12.3	\$14,516,153
3	Traffic Handling	km	\$347,968	6.6	\$2,291,692	12.3	\$4,278,445
4	Miscellaneous Costs	km	\$559,234	6.6	\$3,683,076	12.3	\$6,876,073
5	City Street Relocation/Reconstruction	km	\$329,327	6.6	\$2,168,923	12.3	\$4,049,243
6	Removals	km	\$323,113	6.6	\$2,128,000	12.3	\$3,972,842
7	Surveillance, Control, & Communications	km	\$124,274	6.6	\$818,461	12.3	\$1,528,016
<b>Interchange (includes structure, right-of-way, and mobilization)</b>							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$177,525,000	3	\$532,575,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	1	\$23,610,000	2	\$47,220,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0	1	\$13,040,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	1	\$9,610,000
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	0	\$0	1	\$18,200,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	0	\$0	0	\$0
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	1	\$16,170,000	1	\$16,170,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	0	\$0	0	\$0
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	3	\$2,700,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	0	\$0	1	\$14,825,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	2	\$6,200,000
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
<b>Utility Relocation</b>							
1	Major Utility relocations - Urban	km	\$758,511	1.6	\$1,248,876	8.2	\$6,217,528
2	Major Utility relocations - Suburban	km	\$406,345	0.0	\$0	2.5	\$999,246
3	Major Utility relocations - Undeveloped	km	\$11,919	4.9	\$58,876	1.6	\$19,541
<b>Right-of-Way Items (Interchange Right-of-Way cost not included)</b>							
1	Right-of-way - Urban	Hectares	\$3,499,093	1.2	\$4,148,061	5.9	\$20,651,118
2	Right-of-way - Suburban	Hectares	\$1,166,364	0.0	\$0	1.8	\$2,065,112
3	Right-of-way - Undeveloped	Hectares	\$291,591	3.6	\$1,037,015	1.2	\$344,185
<b>Environmental Mitigation</b>							
Environmental Mitigation (3% of Construction Costs)					\$7,508,965		\$21,274,848
<b>Program Implementation Costs</b>							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$67,063,179		\$192,141,698
<b>Contingencies</b>							
Contingencies (25% of Total Construction Cost)					\$65,748,215		\$188,374,214
<b>Total Construction</b>					\$250,298,820		\$709,161,594
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>					\$262,992,861		\$753,496,857
<b>Grand Total</b>					\$395,804,255		\$1,134,012,770

**QUANTITY WORKSHEET - Modal Alternative  
CAPITAL COST ESTIMATES  
CA HSRA PROGRAM EIR/EIS  
Los Angeles - Orange - San Diego**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
Highway Cost				I-5 Los Angeles to I-10		I-5 I-10 to Norwalk	
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	4	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	1.2	See Items 3-6	33.3	See Items 3-6
3	Pavement-AC	m2	\$48	5810.5	\$281,446	79977.7	\$3,873,928
4	Pavement-PCC	m2	\$65	11621.0	\$755,364	159955.4	\$10,397,101
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	17431.5	\$113,998	239933.1	\$1,569,103
<b>Other</b>							
1	Overhead Signs	ea	\$20,000	2	\$40,000	44	\$880,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	1.2	\$1,429,145	33.3	\$39,342,541
3	Traffic Handling	km	\$347,968	1.2	\$421,222	33.3	\$11,595,696
4	Miscellaneous Costs	km	\$559,234	1.2	\$676,963	33.3	\$18,635,940
5	City Street Relocation/Reconstruction	km	\$329,327	1.2	\$398,656	33.3	\$10,974,498
6	Removals	km	\$323,113	1.2	\$391,134	33.3	\$10,767,432
7	Surveillance, Control, & Communications	km	\$124,274	1.2	\$150,436	33.3	\$4,141,320
<b>Interchange (includes structure, right-of-way, and mobilization)</b>							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$177,525,000	4	\$710,100,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	0	\$0	1	\$23,610,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0	0	\$0
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	1	\$9,610,000
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	0	\$0	3	\$54,600,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	0	\$0	3	\$31,020,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	1	\$9,610,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	1	\$200,000
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	0	\$0	0	\$0
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	0	\$0	4	\$80,200,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	3	\$2,700,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	1	\$14,825,000	8	\$118,600,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	1	\$900,000	5	\$4,500,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	1	\$900,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	3	\$9,300,000
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
<b>Utility Relocation</b>							
1	Major Utility relocations - Urban	km	\$758,511	0.0	\$0	8.8	\$6,651,755
2	Major Utility relocations - Suburban	km	\$406,345	1.2	\$491,889	22.8	\$9,264,945
3	Major Utility relocations - Undeveloped	km	\$11,919	0.0	\$0	1.8	\$20,906
<b>Right-of-Way Items (Interchange Right-of-Way cost not included)</b>							
1	Right-of-way - Urban	Hectares	\$3,499,093	0.0	\$0	6.3	\$22,093,376
2	Right-of-way - Suburban	Hectares	\$1,166,364	1.7	\$2,033,145	16.4	\$19,147,593
3	Right-of-way - Undeveloped	Hectares	\$291,591	0.0	\$0	1.3	\$368,223
<b>Environmental Mitigation</b>							
Environmental Mitigation (3% of Construction Costs)					\$5,952,008		\$35,491,955
<b>Program Implementation Costs</b>							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$52,628,279		\$321,342,410
<b>Contingencies</b>							
Contingencies (25% of Total Construction Cost)					\$51,596,352		\$315,041,578
<b>Total Construction</b>					\$198,400,254		\$1,183,065,165
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>					\$206,385,406		\$1,260,166,312
<b>Grand Total</b>					\$310,610,037		\$1,896,550,299



**QUANTITY WORKSHEET - Modal Alternative  
CAPITAL COST ESTIMATES  
CA HSRA PROGRAM EIR/EIS  
Los Angeles - Orange - San Diego**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
Highway Cost				I-5 Norwalk to Anaheim		I-5 Anaheim to Irvine	
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	13.1	See Items 3-6	16.2	See Items 3-6
3	Pavement-AC	m2	\$48	31400.2	\$1,520,948	38780.7	\$1,878,444
4	Pavement-PCC	m2	\$65	62800.3	\$4,082,020	77561.4	\$5,041,493
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	94200.5	\$616,048	116342.1	\$760,849
<b>Other</b>							
1	Overhead Signs	ea	\$20,000	40	\$800,000	28	\$560,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	13.1	\$15,446,327	16.2	\$19,076,964
3	Traffic Handling	km	\$347,968	13.1	\$4,552,602	16.2	\$5,622,684
4	Miscellaneous Costs	km	\$559,234	13.1	\$7,316,681	16.2	\$9,036,456
5	City Street Relocation/Reconstruction	km	\$329,327	13.1	\$4,308,712	16.2	\$5,321,469
6	Removals	km	\$323,113	13.1	\$4,227,416	16.2	\$5,221,064
7	Surveillance, Control, & Communications	km	\$124,274	13.1	\$1,625,929	16.2	\$2,008,101
<b>Interchange (includes structure, right-of-way, and mobilization)</b>							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$177,525,000	4	\$710,100,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	5	\$118,050,000	2	\$47,220,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	4	\$52,160,000	2	\$26,080,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	3	\$54,600,000	1	\$18,200,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	2	\$20,680,000	0	\$0
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	1	\$9,610,000	0	\$0
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	0	\$0	0	\$0
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	3	\$60,150,000	4	\$80,200,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	1	\$900,000	3	\$2,700,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	1	\$14,825,000	5	\$74,125,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	1	\$900,000	1	\$900,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	1	\$3,100,000	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	1	\$3,100,000	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
<b>Utility Relocation</b>							
1	Major Utility relocations - Urban	km	\$758,511	8.4	\$6,351,300	10.3	\$7,799,595
2	Major Utility relocations - Suburban	km	\$406,345	4.7	\$1,913,896	5.9	\$2,387,631
3	Major Utility relocations - Undeveloped	km	\$11,919	0.0	\$0	0.0	\$0
<b>Right-of-Way Items (Interchange Right-of-Way cost not included)</b>							
1	Right-of-way - Urban	Hectares	\$3,499,093	6.0	\$21,095,435	7.4	\$25,905,852
2	Right-of-way - Suburban	Hectares	\$1,166,364	3.4	\$3,955,394	4.2	\$4,934,448
3	Right-of-way - Undeveloped	Hectares	\$291,591	0.0	\$0	0.0	\$0
<b>Environmental Mitigation</b>							
Environmental Mitigation (3% of Construction Costs)					\$17,339,156		\$30,727,193
<b>Program Implementation Costs</b>							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$158,192,276		\$276,880,847
<b>Contingencies</b>							
Contingencies (25% of Total Construction Cost)					\$155,090,467		\$271,451,811
<b>Total Construction</b>					\$577,971,880		\$1,024,239,750
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>					\$620,361,866		\$1,085,807,243
<b>Grand Total</b>					\$933,644,609		\$1,634,139,901

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Los Angeles - Orange - San Diego**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
Highway Cost				I-5 Irvine to I-405		I-5 I-405 to SR-78	
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	4.2	See Items 3-6	68.9	See Items 3-6
3	Pavement-AC	m2	\$48	10117.5	\$490,065	165289.8	\$8,006,240
4	Pavement-PCC	m2	\$65	20234.9	\$1,315,269	330579.6	\$21,487,673
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	30352.4	\$198,497	495869.4	\$3,242,863
Other							
1	Overhead Signs	ea	\$20,000	10	\$200,000	62	\$1,240,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	4.2	\$4,976,965	68.9	\$81,309,165
3	Traffic Handling	km	\$347,968	4.2	\$1,466,895	68.9	\$23,964,807
4	Miscellaneous Costs	km	\$559,234	4.2	\$2,357,510	68.9	\$38,514,868
5	City Street Relocation/Reconstruction	km	\$329,327	4.2	\$1,388,311	68.9	\$22,680,978
6	Removals	km	\$323,113	4.2	\$1,362,117	68.9	\$22,253,035
7	Surveillance, Control, & Communications	km	\$124,274	4.2	\$523,891	68.9	\$8,558,860
Interchange (includes structure, right-of-way, and mobilization)							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	2	\$355,050,000	3	\$532,575,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	2	\$47,220,000	2	\$47,220,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	1	\$13,040,000	2	\$26,080,000
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	0	\$0	3	\$54,600,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	0	\$0	2	\$20,680,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	0	\$0	1	\$16,170,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0	1	\$9,350,000
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	1	\$9,610,000
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	1	\$20,050,000	4	\$80,200,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	3	\$2,700,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	1	\$14,825,000	9	\$133,425,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	1	\$900,000	5	\$4,500,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	6	\$77,100,000
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0	0	\$0
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	1	\$3,100,000
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
Utility Relocation							
1	Major Utility relocations - Urban	km	\$758,511	3.2	\$2,398,189	20.8	\$15,793,262
2	Major Utility relocations - Suburban	km	\$406,345	1.1	\$428,248	33.6	\$13,667,246
3	Major Utility relocations - Undeveloped	km	\$11,919	0.0	\$0	14.4	\$171,817
Right-of-Way Items (Interchange Right-of-Way cost not included)							
1	Right-of-way - Urban	Hectares	\$3,499,093	2.3	\$7,965,429	15.0	\$52,456,303
2	Right-of-way - Suburban	Hectares	\$1,166,364	0.8	\$885,048	24.2	\$28,245,702
3	Right-of-way - Undeveloped	Hectares	\$291,591	0.0	\$0	10.4	\$3,026,325
Environmental Mitigation							
Environmental Mitigation (3% of Construction Costs)					\$14,045,729		\$38,346,024
Program Implementation Costs							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$125,227,226		\$357,070,168
Contingencies							
Contingencies (25% of Total Construction Cost)					\$122,771,791		\$350,068,792
Total Construction					\$468,190,957		\$1,278,200,813
Total Construction and Right of Way (Includes Environmental Mitigation)					\$491,087,163		\$1,400,275,167
Grand Total					\$739,086,180		\$2,107,414,127

**QUANTITY WORKSHEET - Modal Alternative**  
**CAPITAL COST ESTIMATES**  
**CA HSRA PROGRAM EIR/EIS**  
**Los Angeles - Orange - San Diego**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments			
				I-5 SR-78 to University Town Center		I-5/I-8 University Town Center to San Diego Airport	
Highway Cost							
Main Line				Unit	Unit Cost	Unit	Unit Cost
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6	2	See Items 3-6
2	Length of Highway	km	N/A	40.5	See Items 3-6	14.5	See Items 3-6
3	Pavement-AC	m2	\$48	97262.2	\$4,711,147	34870.8	\$1,689,058
4	Pavement-PCC	m2	\$65	194524.4	\$12,644,085	69741.6	\$4,533,203
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0	0.0	\$0
6	Earthwork	m3	\$7	291786.6	\$1,908,212	104612.4	\$684,139
Other							
1	Overhead Signs	ea	\$20,000	36	\$720,000	24	\$480,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	40.5	\$47,845,107	14.5	\$17,153,602
3	Traffic Handling	km	\$347,968	40.5	\$14,101,716	14.5	\$5,055,798
4	Miscellaneous Costs	km	\$559,234	40.5	\$22,663,472	14.5	\$8,125,390
5	City Street Relocation/Reconstruction	km	\$329,327	40.5	\$13,346,267	14.5	\$4,784,952
6	Removals	km	\$323,113	40.5	\$13,094,450	14.5	\$4,694,670
7	Surveillance, Control, & Communications	km	\$124,274	40.5	\$5,036,327	14.5	\$1,805,642
Interchange (includes structure, right-of-way, and mobilization)							
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	2	\$355,050,000	3	\$532,575,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	2	\$47,220,000	1	\$23,610,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	1	\$13,040,000	0	\$0
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	4	\$72,800,000	2	\$36,400,000
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	3	\$31,020,000	2	\$20,680,000
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	1	\$9,610,000
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	0	\$0	1	\$16,170,000
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	2	\$40,100,000	1	\$20,050,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	4	\$3,600,000	6	\$5,400,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	6	\$88,950,000	5	\$74,125,000
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	2	\$1,800,000	2	\$1,800,000
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	1	\$900,000	1	\$900,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0	0	\$0
Utility Relocation							
1	Major Utility relocations - Urban	km	\$758,511	16.5	\$12,523,448	5.8	\$4,408,316
2	Major Utility relocations - Suburban	km	\$406,345	22.5	\$9,148,622	7.0	\$2,833,918
3	Major Utility relocations - Undeveloped	km	\$11,919	1.5	\$17,891	1.7	\$20,782
Right-of-Way Items (Interchange Right-of-Way cost not included)							
1	Right-of-way - Urban	Hectares	\$3,499,093	11.9	\$41,595,824	4.2	\$14,641,939
2	Right-of-way - Suburban	Hectares	\$1,166,364	16.2	\$18,907,193	5.0	\$5,856,776
3	Right-of-way - Undeveloped	Hectares	\$291,591	1.1	\$315,120	1.3	\$366,048
Environmental Mitigation							
Environmental Mitigation (3% of Construction Costs)					\$24,367,222		\$23,927,684
Program Implementation Costs							
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$228,843,657		\$214,807,389
Contingencies							
Contingencies (25% of Total Construction Cost)					\$224,356,526		\$210,595,480
Total Construction					\$812,240,745		\$797,589,471
Total Construction and Right of Way (Includes Environmental Mitigation)					\$897,426,104		\$842,381,919
Grand Total					\$1,350,626,287		\$1,267,784,788

**QUANTITY WORKSHEET - Modal Alternative  
CAPITAL COST ESTIMATES  
CA HSRA PROGRAM EIR/EIS  
Los Angeles - Orange - San Diego**

COST ELEMENTS		UNIT	UNIT PRICE	Highway Segments	
<b>Highway Cost</b>				<b>I-8 SR-163 to I-5</b>	
<b>Main Line</b>				<b>Unit</b>	<b>Unit Cost</b>
1	No. of additional lanes in both directions	ea	N/A	2	See Items 3-6
2	Length of Highway	km	N/A	3.9	See Items 3-6
3	Pavement-AC	m2	\$48	9361.9	\$453,468
4	Pavement-PCC	m2	\$65	18723.8	\$1,217,048
5	Separate Aerial Structure	m2	\$1,346	0.0	\$0
6	Earthwork	m3	\$7	28085.7	\$183,674
<b>Other</b>					
1	Overhead Signs	ea	\$20,000	6	\$120,000
2	Drainage, Landscape, Signing, Signals, & Lighting	km	\$1,180,605	3.9	\$4,605,299
3	Traffic Handling	km	\$347,968	3.9	\$1,357,351
4	Miscellaneous Costs	km	\$559,234	3.9	\$2,181,457
5	City Street Relocation/Reconstruction	km	\$329,327	3.9	\$1,284,636
6	Removals	km	\$323,113	3.9	\$1,260,398
7	Surveillance, Control, & Communications	km	\$124,274	3.9	\$484,768
<b>Interchange (includes structure, right-of-way, and mobilization)</b>					
1	Major Freeway to Freeway Interchanges	ea	\$177,525,000	1	\$177,525,000
2	Urb Overcrossing Full Interchange Replacement	ea	\$23,610,000	1	\$23,610,000
3	Urb Overcrossing Ramp Modification	ea	\$13,040,000	0	\$0
4	Urb Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0
5	Urb Overcrossing Bridge Modification	ea	\$200,000	0	\$0
6	Sub Overcrossing Full Interchange Replacement	ea	\$18,200,000	0	\$0
7	Sub Overcrossing Ramp Modification	ea	\$10,340,000	0	\$0
8	Sub Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0
9	Sub Overcrossing Bridge Modification	ea	\$200,000	0	\$0
10	Und Overcrossing Full Interchange Replacement	ea	\$16,170,000	0	\$0
11	Und Overcrossing Ramp Modification	ea	\$9,350,000	0	\$0
12	Und Overcrossing Bridge Replacement	ea	\$9,610,000	0	\$0
13	Und Overcrossing Bridge Modification	ea	\$200,000	0	\$0
14	Urb Undercrossing Freeway Widening & Ramp Mod	ea	\$20,050,000	2	\$40,100,000
15	Urb Freeway Bridge Widening (No Interchange)	ea	\$900,000	1	\$900,000
16	Sub Undercrossing Freeway Widening & Ramp Mod	ea	\$14,825,000	0	\$0
17	Sub Freeway Bridge Widening (No Interchange)	ea	\$900,000	0	\$0
18	Und Undercrossing Freeway Widening & Ramp Mod	ea	\$12,850,000	0	\$0
19	Und Freeway Bridge Widening (No Interchange)	ea	\$900,000	2	\$1,800,000
20	Urb At-Grade Interchange Modification	ea	\$3,100,000	0	\$0
21	Sub At-Grade Interchange Modification	ea	\$3,100,000	0	\$0
22	Und At-Grade Interchange Modification	ea	\$3,100,000	0	\$0
<b>Utility Relocation</b>					
1	Major Utility relocations - Urban	km	\$758,511	2.8	\$2,113,427
2	Major Utility relocations - Suburban	km	\$406,345	0.0	\$0
3	Major Utility relocations - Undeveloped	km	\$11,919	1.1	\$13,284
<b>Right-of-Way Items (Interchange Right-of-Way cost not included)</b>					
1	Right-of-way - Urban	Hectares	\$3,499,093	2.0	\$7,019,612
2	Right-of-way - Suburban	Hectares	\$1,166,364	0.0	\$0
3	Right-of-way - Undeveloped	Hectares	\$291,591	0.8	\$233,987
<b>Environmental Mitigation</b>					
Environmental Mitigation (3% of Construction Costs)					\$7,776,294
<b>Program Implementation Costs</b>					
Program Implementation Costs (25.5% of Total Cost and Procurement)					\$69,931,125
<b>Contingencies</b>					
Contingencies (25% of Total Construction Cost)					\$68,559,926
<b>Total Construction</b>					\$259,209,811
<b>Total Construction and Right of Way (Includes Environmental Mitigation)</b>					\$274,239,704
<b>Grand Total</b>					\$412,730,755